

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for operating a torque-converter lockup clutch (20) for a hydrodynamic torque converter (1), comprising:

adjusting where the slip of the torque converter (1) is adjusted using a setpoint value (sw), while the torque-converter lockup clutch (20) is being closed, the setpoint value (sw) being continuously selected inside a closing interval after the initiation of said closing interval, as a function of time, and taking into account the input torque (E) currently applied to the torque converter (1);

taking into account a preselected time characteristic for a time-dependence of the setpoint value (sw) and converting the slip existing at the beginning of the closing interval as an initial value, into a target value, within the closing interval;

monitoring the input torque (E) applied to the torque converter (1) inside the closing interval;

determining whether the input torque (E) has changed by more than a predetermined amount; and

ascertaining the slip of the torque converter (1) and making it the basis for a new initial value, if the input torque (E) has changed more than the predetermined amount, which would appear at this input torque (E) in the case of a completely opened torque-converter lockup clutch (20).

Claim 2. (Canceled).

3. (Currently Amended) The method as recited in Claim [[2]] 1, where a linear transition from the initial value to the target value is provided as a time characteristic inside the closing interval.

Claim 4. (Canceled).

5. (Currently Amended) The method as recited in Claim [[4]] 1, where the value resulting from the preselected time characteristic for the current time inside the closing interval is selected as the setpoint value (sw) for the slip, the time characteristic converting the initial value ascertained using the currently applied input torque (E) into the target value.

6. (Currently Amended) The method as recited in Claim [[4]] 1, where the slip to be used as a new initial value, as a basis for the applied input torque (E) is determined using a stored characteristics map.

7. (Currently Amended) The method as recited in Claim [[4]] 1, where the slip to be used as a new initial value, as a basis for the applied input torque (E) is calculated from the applied input torque (E), taking a performance figure of the torque converter (1) into consideration.

8. (Previously Presented) The method as recited in Claim 1, where, in order to adjust the slip, a controlled parameter is provided for setting a clamping pressure for the torque converter.

9. (Previously Presented) The method as recited in Claim 1, where the time characteristic of the slip is monitored for a decline, in order to detect the start of power transmission in the torque-converter lockup clutch (20).

10. (Original) The method as recited in Claim 9, where, after a decrease in the slip is detected, a clamping pressure for the torque converter (1) is set as a function of a coupling torque to be transmitted, and as a function of the setpoint value (sw) for the slip of the torque-converter lockup clutch (20).

11. (Currently Amended) A control device (24) for a torque-converter lockup clutch (20) for a hydrodynamic torque converter (1), where a sensor (32) for detecting the input torque (E) applied to the torque converter (1) is connected to a control unit (26), which selects a setpoint value (sw) for the slip of the torque converter (1) inside a closing interval after the initiation of said closing interval as a function of time, and taking into consideration the input torque (E) currently being applied to the torque converter (1) inside the closing interval;

wherein the control unit (26) is connected to data storage unit (36), in which a time characteristic for the setpoint value (sw) of the slip is stored, a slip existing at the beginning of a closing interval as an initial value being converted into a target value within the closing interval, in accordance with the time characteristic for the setpoint value of the slip;

wherein a data record is stored in the data storage unit (36), from which a slip value can be derived for each input torque (E), the slip value being intended to be used as an initial value, as a basis for determining the setpoint value (sw) for the slip as a function of time; and

wherein the control device is configured to monitor the input torque (E) and changes to the input torque in the closing interval and if the input torque (E) changes more than a predetermined amount the control device ascertains the slip of the torque converter (1) and makes it the basis for a new initial value.

12. (Original) The control device (24) as recited in Claim 11, whose control unit (26) is connected on the output side to means for setting a clamping pressure for the torque converter (1).

Claims 13 and 14. (Canceled).

15. (Currently Amended) The control device (24) as recited in Claim ~~[[13]]~~ 11, in whose data storage unit (36) a characteristics map is stored, which, inside specifiable interval boundaries, assigns each performance figure of the torque converter (1) a corresponding slip value.

16. (Currently Amended) A method for operating a torque-converter lockup clutch for a hydrodynamic torque converter, comprising:

adjusting the slip of the torque converter in accordance with a setpoint value while closing the torque-converter lockup clutch, the setpoint value continuously selected inside a closing interval after the initiation of said closing interval as a function of time and taking into account the input torque currently applied to the torque converter;

taking into account a preselected time characteristic for a time-dependence of the setpoint value, said time characteristic converting the slip existing at the beginning of the closing interval as an initial value into a target value within the closing interval;

monitoring the input torque applied to the torque converter inside the closing interval;

determining when the input torque changes more than a predetermined amount;

ascertaining the slip of the torque converter; and

taking the ascertained slip of the torque converter as a new value if the input torque changes more than the predetermined amount, said new value appearing at this input torque in the case of a completely opened torque-converter lockup clutch.

Claim 17. (Canceled).

18. (Currently Amended) The method as recited in Claim ~~[[17]]~~ 16,

wherein the time characteristic includes a linear transition from the initial value to the target value inside the closing interval.

Claim 19. (Canceled).

20. (Currently Amended) The method as recited in Claim ~~[[19]]~~ 16, further comprising selecting the value resulting from the preselected time characteristic for the current time inside the closing interval as the setpoint value for the slip, the time characteristic converting the initial value ascertained using the currently applied input torque into the target value.

21. (Currently Amended) The method as recited in Claim ~~[[19]]~~ 16, wherein the slip to be used as a new initial value and as a basis for the applied input torque is determined using a stored characteristics map.

22. (Currently Amended) The method as recited in Claim ~~[[19]]~~ 16, wherein the slip to be used as a new initial value and as a basis for the applied input torque is calculated from the applied input torque taking into account the performance figure of the torque converter.

23. (Currently Amended) The method as recited in claim ~~[[17]]~~ 16, further comprising providing a controlled parameter for setting a clamping pressure for the torque converter for adjusting the slip.

24. (Currently Amended) The method as recited in Claim ~~[[17]]~~ 16, further comprising detecting the start of power transmission in the torque-converter lockup clutch by monitoring the time characteristic of the slip for a decline.

25. (Previously Presented) The method as recited in Claim 24, further comprising setting a clamping pressure for the torque converter as a function of a coupling torque to be transmitted after a decrease in the slip is detected and as a function of the setpoint value for the slip of the torque-converter lockup clutch.

26. (Currently Amended) A control device for a torque-converter lockup clutch for a hydrodynamic torque converter, comprising:
a control unit; and

a sensor connected to the control unit, said sensor configured to detect input torque applied to the torque converter, said control unit configured to select a setpoint value for the slip of the torque converter inside a closing interval after the initiation of said closing interval as a function of time and taking into consideration the input torque currently being applied to the torque converter;

wherein the control unit is connected to a data storage unit configured to store a time characteristic for the setpoint value, said control unit configured to convert a slip existing at the beginning of a closing interval as an initial value into a target value within the closing interval in accordance with the time characteristic for the setpoint value of the slip;

wherein a data record is stored in the data storage unit, said control unit configured to derive from the data record a slip value for each input torque and in accordance with said slip value as an initial value and as a basis to determine the setpoint value for the slip as a function of time; and

wherein the control device is configured to monitor the input torque and changes to the input torque in the closing interval and if the input torque changes more than a predetermined amount the control device ascertains the slip of the torque converter (1) and makes it the basis for a new initial value.

27. (Previously Presented) The control device as recited in Claim 26,
wherein the control unit is connected on an output side to an arrangement configured to set a clamping pressure for the torque converter.

Claims 28 and 29. (Canceled).

30. (Currently Amended) The control device as recited in Claim [[28]] 26,
wherein the data storage unit includes a characteristics map, which, inside specifiable interval boundaries, includes a slip value for each corresponding performance figure of the torque converter.

31. (Currently Amended) A method for transitioning a torque-converter lockup clutch from an open state to a closed state, comprising the steps of:

adjusting the clutch slip during a closing interval to a setpoint value according to a desired predetermined setpoint value time characteristic; and

continuously adjusting the predetermined setpoint value time characteristic within the closing interval taking into consideration the input torque currently being applied to the torque converter;

taking into account a preselected time characteristic for a time-dependence of the setpoint value, said time characteristic converting the slip existing at the beginning of the closing interval as an initial value into a target value within the closing interval;

monitoring the input torque applied to the torque converter inside the closing interval;

determining when the input torque changes more than a predetermined amount;

ascertaining the slip of the torque converter; and

taking the slip of the torque converter as a new value if the input torque changes more than the predetermined amount, said new value appearing at this input torque in the case of a completely opened torque-converter lockup clutch.